Stat and Data Analysis

CW 6.2

Put all answers on a separate sheet of paper with your name.

1. A new scratch resistant lens has been developed for eyeglasses for young children. The developer is interested to see how the new lens would hold up against the current lens used for children’s eyeglasses. He recruits 64 children who regularly wear eyeglasses. They will be given new eyeglasses at the beginning of the study. After 6 months the eyeglasses will be returned and the amount of damage to the lens will be assessed.
2. What are the subjects?
3. What are the explanatory variables?
4. What are the treatments?
5. What are the response variables?
6. Would a placebo be appropriate here? Explain.
7. Create a Completely Randomized Design for this experiment.
8. Clearly explain how you would randomly assign the subjects to the treatments using a table of random digits.
9. Create a Matched Pairs Design for this experiment.
10. Explain why the matched pairs design is a better choice.
11. A new drug has been developed that is supposed to speed up the healing for those that suffer ligament damage. Researchers at a few local hospitals were able to volunteer 42 males with ligaments ruptures and 32 males with ligament sprains. Each volunteer will be evaluated every week to find when the ligament is completely healed.
12. What are the subjects?
13. What are the explanatory variables?
14. What are the treatments?
15. What are the response variables?
16. Create a Block Design for this experiment.
17. Explain how this experiment could be double-blind in context.

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